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difficulty and national importance of which all will admit, I shall feel that I have not been altogether unworthy of the honor of occupying this chair.

PHILIP MAGNUS

SCIENTIFIC BOOKS

Report on the Diatoms of the Albatross Voyages in the Pacific Ocean, 1888-1904. By ALBERT MANN. Assisted in the bibliography and citations by P. L. RICKER. Contributions from the United States National Herbarium, Vol. X., Part 5. Washington, Government Printing Office. 1907.

According to the author, the object of this report is, first, to contribute to the systematic study of the diatoms, and, second, to call attention to the value of further investigations in this field for throwing light upon certain meteorological and geological problems connected with marine investigations. There also has been prepared a set of carefully identified specimens of all the species enumerated, including types of all new species, which collection has been deposited in the United States National Museum. On account of the inadequate methods used in making the gatherings from the *Albatross*, the number of species listed is not nearly so great as might be expected. In fact, considering the large number of soundings and dredgings made and the years over which the work extends, the results are disappointing. It seems unfortunate that the amount of energy and time necessary to properly examine gatherings of this kind should have to be wasted upon barren samples, when the adoption of other methods would have undoubtedly resulted in rich hauls of diatoms. Critical notes upon some three hundred species, thirty-seven of which are new, are given and a sufficiently full discussion of the fifty odd genera concerned is included. The account of the species discussed is considerably more than a mere list, and is of such worth that one regrets all the more the limitations which have been put upon the work. A most careful comparison of the views of various authorities upon each species has been made and should do much towards giving a

really clear conception of the forms discussed. When one considers the inaccessibility of a large amount of the literature upon the diatoms, it seems probable that this part of the report will be one of the most helpful features.

While it may not have been practicable under the circumstances to prepare an absolutely exhaustive list of the synonymy, there seems to be no reason for the omission of names elsewhere cited, even though "the horde of synonyms would be so great as to become most misleading unless accompanied by extensive explanations." Instead of such a discussion "being quite foreign to the purpose of this report" it would seem to be the very place in which to set forth as fully as might be necessary, the reasons for retaining or rejecting names. Certainly the present chaotic conditions of the nomenclature of the diatoms can not be cleared up so long as this tedious but necessary aspect of the subject is disregarded.

The number of stations from which diatoms were collected was altogether too meager to warrant any generalizations regarding either the origin of the bottom from which they came, or the course of the ocean currents which carried them. However, the importance of planning future work with such an end in view is very properly pointed out and some good examples are given of specific knowledge of this character being obtained from a study of the diatoms of a given region.

It is a satisfaction to know that all of the species reported upon have been permanently mounted in such a way as to make them readily accessible to those who may have occasion to refer to them. Not only is there a series of group slides containing specimens of all the forms gathered in a specific locality, but each species has been mounted separately, and the position definitely indicated so that it may be instantly found under the microscope. The value of such a set of slides can only be appreciated by those who have had to search for a particular species in the heterogeneous mass of diatoms and other organisms with which it is usually mounted.

It appears that Mr. Ricker has not only assisted in the bibliography and citations to diatom literature, but has passed upon the many taxonomic problems involved. The painstaking manner in which this has been done adds greatly to the value of the report.

The new species, together with a few others, are well figured by some very good microphotographs.

GEORGE T. MOORE

Leitfaden für den biologischen Unterricht.

Von K. KRAEPELIN, Direktor des Naturhistorischen Museums in Hamburg. Leipzig und Berlin, B. G. Teubner. 1907.

This little manual forms one of a series devoted to the extension of biological interest and the improvement of teaching in the German schools. Others of the series are devoted explicitly to the teaching of botany and zoology. Of similar import are still others devoted to nature study, for example, "Naturstudien in Wald und Feld"; and "Naturstudien in der Sommerfrische." All of which may be taken as indicative of the broadening and liberalizing movements in education the world over.

This particular book, as its name implies, is devoted to the distinctively biological aspects of nature study, but with reference to the higher schools, as indicated in the full title, "Leitfaden für den Biologischen Unterricht in den Oberen Klassen der Höheren Schulen."

The book comprises something over three hundred pages of well-printed and amply and beautifully illustrated matter. One finds, as the author himself admits, some question as to just where to draw the line of a happy medium between the "Scylla" of too much, and the "Charybdis" of too little; and to the reviewer it seems as if the former rock had been barely missed. At any rate, for American high schools we should regard of doubtful educational value the introduction of the intricate problems of prehistoric man and archeology. It must be said, however, that these are touched upon in the present book in only a very elementary manner.

Something of the scope of the book may be

gathered from the following partial glimpse of the table of contents.

First Section. The dependence of life on the influence of the surrounding world. Of the factors may be mentioned: (1) The *temperature* limits of plant life, and in a later section the same in reference to animal life. (2) Influence of light on plant life. (3) Surrounding media, soil, atmosphere, water, etc.

A section is devoted to the relations of plants to each other, and also to animals, or what we usually understand as ecology. The author employs this and several other terms in designating phases of these relations, going into what seems to the reviewer unnecessary details for an elementary treatise.

The second section is devoted to the "structure and vital activities of the organic world." Under this head are presented some of the more profound and difficult problems of his subject, yet on the whole the treatment is clear and stimulating, though rather difficult for pupils of the age of those concerned.

The third section deals with man as an object of scientific consideration. Brief reference has already been made to phases of this section. In general it deals with the structure and functions of the human body, problems of nutrition, metabolism, etc.

On the whole the book is worthy of cordial approval. It is well printed on good paper, and is marred by very few typographical errors.

CHAS. W. HARGITT

SYRACUSE UNIVERSITY

Elements of Physiology. By THEODORE HOUGH and WILLIAM T. SEDGWICK. Boston, Ginn & Co.

The present book is a reprint of the physiological portion of our larger work entitled "The Human Mechanism," together with chapter XX., . . . which has been added to meet the requirements of law in some states with regard to the teaching of physiology. (From the preface.)

It fell to the lot of the present writer to review the "larger work" referred to above in the issue of SCIENCE for April 19 of the current year. And since the present book is, as stated above, a reprint of the former, it will